

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference P035463WO	FOR FURTHER ACTION <small>see Form PCT/ISA/220 as well as, where applicable, item 5 below.</small>	
International application No. PCT/IB2004/003373	International filing date (day/month/year) 04/10/2004	(Earliest) Priority Date (day/month/year) 02/10/2003
Applicant CHIRON SRL		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 9 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☒ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☒ **Certain claims were found unsearchable** (See Box II).

3. ☒ **Unity of invention is lacking** (see Box III).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

a. the figure of the **drawings** to be published with the abstract is Figure No. _____

☐ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☒ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB2004/003373

Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:

a. type of material



a sequence listing



table(s) related to the sequence listing

b. format of material



in written format



in computer readable form

c. time of filing/furnishing



contained in the international application as filed



filed together with the international application in computer readable form



furnished subsequently to this Authority for the purpose of search

2. ☒ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

3. Additional comments:

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2004/003373

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-17

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-17

Immunogenic composition comprising a conjugated capsular saccharide antigen of each serogroup C, W135 and Y, and one or more polypeptide antigens from serogroup B

2. claims: 18-20

Immunogenic composition comprising a conjugated serogroup W135 capsular saccharide antigen and a conjugated H. influenza type b capsular saccharide antigen.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB2004/003373

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61K39/095 A61K39/102 A61K39/09

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>VEGA MASIGNANI ET AL.: "Vaccination against Neisseria meningitidis using three variants of the lipoprotein GNA1870" JOURNAL OF EXPERIMENTAL MEDICINE, vol. 197, no. 6, 17 March 2003 (2003-03-17), pages 789-799, XP002286107</p> <p>page 790, left-hand column, paragraph 2 - paragraph 3</p> <p>page 793, left-hand column, paragraph 2 - paragraph 3</p> <p>page 797, right-hand column, paragraph 2</p> <p>-----</p> <p>-/--</p>	1-17

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

15 April 2005

Date of mailing of the international search report

19 -08- 2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
 Fax: (+31-70) 340-3016

Authorized officer

Montero Lopez, B

INTERNATIONAL SEARCH REPORT

International Application No
PCT/IB2004/003373

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	MARIAGRAZIA PIZZA ET AL.: "Identification of vaccine candidates against serogroup B meningococcus by whole-genome sequencing" SCIENCE, vol. 287, 10 March 2000 (2000-03-10), pages 1816-1820, XP000914964 page 1816, middle column, paragraph 1 - page 1819, middle column, paragraph 1 -----	1-17
Y	JEANNETTE ADU-BOBIE ET AL.: "Two years into reverse vaccinology" VACCINE, vol. 21, January 2003 (2003-01), pages 605-610, XP004401591 page 606, left-hand column, paragraph 3 - page 608, left-hand column, paragraph 3 -----	1-8, 10-17
Y	MARIROSA MORA ET AL.: "Reverse vaccinology" DRUG DISCOVERY TODAY, vol. 8, no. 10, May 2003 (2003-05), pages 459-464, XP002324779 page 461, right-hand column, last paragraph - page 462, left-hand column, paragraph 1 -----	1-6, 10-17
Y	WO 02/058737 A (AVENTIS PASTEUR) 1 August 2002 (2002-08-01) the whole document -----	1-17
Y	WO 03/020756 A (CHIRON SPA) 13 March 2003 (2003-03-13) the whole document -----	9
A	WO 99/42130 A (CONNAUGHT LABORATORIES LIMITED) 26 August 1999 (1999-08-26) page 3, line 8 - page 9, line 9 page 9, line 30 - page 12, line 15 -----	1-17
A	MICHAEL BRÖKER: "Development of new vaccines against meningococcal disease" ARZNEIMITTEL-FORSCHUNG, vol. 53, no. 12, 2003, pages 805-813, XP008045729 page 808, left-hand column, paragraph 3 - page 809, right-hand column, paragraph 2 page 811, right-hand column, paragraph 1 - page 812, left-hand column, paragraph 2 ----- -/--	1-17

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB2004/003373

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>LUIS JÓDAR ET AL.: "Development of vaccines against meningococcal disease" THE LANCET, vol. 359, 27 April 2002 (2002-04-27), pages 1499-1508, XP004792462 page 1501, left-hand column, paragraph 1 - page 1502, left-hand column, paragraph 1 page 1505, left-hand column, paragraph 1 - paragraph 2</p> <p>-----</p>	1-17
P,X	<p>WO 2004/067030 A (CHIRON SRL) 12 August 2004 (2004-08-12) page 1, line 30 - page 19, line 26 page 26, line 1 - page 27, line 29 page 34, line 8 - page 35, line 5</p> <p>-----</p>	1-17
P,X	<p>WO 2004/032958 A (CHIRON SRL) 22 April 2004 (2004-04-22) page 2, line 1 - page 8, line 26 page 10, line 30 - line 34 page 11, line 23 - page 12, line 26 page 14, line 9 - line 19 page 18, line 32 - page 30, line 9 page 31, line 20 - page 33, line 19 page 37, line 27 - page 38, last line</p> <p>-----</p>	1-17
P,X	<p>WO 2004/067033 A (CHIRON SRL) 12 August 2004 (2004-08-12) page 1, line 27 - page 2, line 27 page 3, line 15 - page 8, line 9 page 10, line 33 - page 12, line 5 page 12, line 30 - page 14, line 23</p> <p>-----</p>	1-3,5-8, 10-17
P,X	<p>WO 03/094834 A (UNIVERSITEIT LEIDEN) 20 November 2003 (2003-11-20) page 1, paragraph 7 - page 2, paragraph 9 page 3, paragraph 4 - page 8, paragraph 2 page 10, paragraph 8 - page 12, paragraph 3 page 13, paragraph 4 - page 14, paragraph 5</p> <p>-----</p>	1-3,5-8, 10-17

INTERNATIONAL SEARCH REPORT

Information on patent family members

Internal Application No

PCT/IB2004/003373

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 02058737	A	01-08-2002	BR 0206672 A CA 2435681 A1 CN 1610560 A EP 1355673 A2 HU 0302999 A2 JP 2005504718 T LT 2003071 A ,B LV 13128 B NO 20033816 A SI 21352 A WO 02058737 A2 US 2003068336 A1 ZA 200306176 A	10-05-2005 01-08-2002 27-04-2005 29-10-2003 29-12-2003 17-02-2005 25-08-2004 20-07-2004 11-09-2003 30-06-2004 01-08-2002 10-04-2003 13-01-2005
WO 03020756	A	13-03-2003	BR 0211494 A BR 0212363 A CA 2452836 A1 CA 2459816 A1 CN 1582297 A EP 1423419 A2 EP 1412381 A2 WO 03010194 A2 WO 03020756 A2 JP 2005503785 T JP 2005508156 T NZ 532115 A	17-08-2004 10-08-2004 06-02-2003 13-03-2003 16-02-2005 02-06-2004 28-04-2004 06-02-2003 13-03-2003 10-02-2005 31-03-2005 29-04-2005
WO 9942130	A	26-08-1999	US 2001048929 A1 AU 754021 B2 AU 2606499 A BR 9908163 A CA 2321973 A1 WO 9942130 A1 EP 1056470 A1 JP 2002503705 T JP 2004346084 A NZ 506617 A US 6656472 B1	06-12-2001 31-10-2002 06-09-1999 06-11-2001 26-08-1999 26-08-1999 06-12-2000 05-02-2002 09-12-2004 25-07-2003 02-12-2003
WO 2004067030	A	12-08-2004	WO 2004067030 A2	12-08-2004
WO 2004032958	A	22-04-2004	AU 2003274511 A1 CA 2501812 A1 EP 1549338 A1 WO 2004032958 A1	04-05-2004 22-04-2004 06-07-2005 22-04-2004
WO 2004067033	A	12-08-2004	AU 2003233128 A1 BR 0310062 A CA 2485992 A1 EP 1506008 A2 WO 03094834 A2 WO 2004067033 A1	11-11-2003 15-02-2005 20-11-2003 16-02-2005 20-11-2003 12-08-2004
WO 03094834	A	20-11-2003	AU 2003233128 A1 BR 0310062 A CA 2485992 A1 EP 1506008 A2 WO 03094834 A2	11-11-2003 15-02-2005 20-11-2003 16-02-2005 20-11-2003

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB2004/003373

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 03094834 A		WO 2004067033 A1	12-08-2004
		AU 2003239744 A1	11-11-2003
		BR 0310042 A	05-04-2005
		CA 2485999 A1	20-11-2003
		EP 1506007 A2	16-02-2005
		WO 03094960 A2	20-11-2003
